

Case Study 2 Benchmark Condition Documentation

Name: Farmer 2

Address

Resource Setting

Rotation

Alternative: Benchmark

Level of Analysis

Action
Kinds, Amount, Type

Effects
Of Alt. on Benchmark

Impacts
Of Effect on Farm

Corn

Plow: 5-18 plow with 105 hp tractor.
Disk: 20 foot offset with 160 hp tractor, 2x.
Plant: 4-32 with 56 hp tractor, starter fert.
depends on soil test. Usually 28,000
population, 30 lbs. N.
Spray: 32 foot boom sprayer with 56 hp
tractor, Atrazine and Prowl
Custom operation: Topdress urea.
Chop: 2 row corn chopper with 160 hp tractor,
56 hp tractor as transport.
Combine: 2 row picker/sheller with 105 hp
tractor

Small Grain

Plow: Same as corn.
Disk: Same as corn.
Drill (if wheat): 10 foot drill with 56 hp tractor.
Broadcast (if rye): 10 foot spreader (rented)
with 56 hp tractor.
Custom operation: Combine at \$26 per acre.

(Continued on next sheet)

Soil

Ephemeral gullies, sedimentation in ditches and at
base of hills. This has been covering crops,
decreasing yields. Ruts from burying tractors in
wet spots. Established pond filling in. Roads on the
farm and the town road providing access to the
farm have been washing out with muddy water,
causing damage. Flooding and ponding in fields
common.

Water

Muddy water in pond, decreasing palatability for
animals.
Flooding and ponding.

Air

None noted.

Plants

Decreased yields due to erosion. Poor quality
forage leading to lower profits.

Animals

Profits down due to need to purchase feed to
supplement poor quality forage. Inefficiency from
working many small fields. Difficult to use
manpower efficiently.

Positive

Known system.

Negative

High maintenance cost to machinery.
Decreased yields mean more purchased feed.
Poor quality forage means more purchased
feed.
Water quality declining, so herd average
declining.
Washing out roads. Some areas becoming
inaccessible.
Difficult to efficiently use manpower. Many
times, laborers are idle as they wait for
someone to finish an operation.

Name: Farmer 2

Address

Resource Setting

Rotation

Alternative: Benchmark

Level of Analysis

Action
Kinds, Amount, Type

Effects
Of Alt. on Benchmark

Impacts
Of Effect on Farm

Hay
Plow: Same as corn.
Disk: Same as corn.
Drag: 10 foot with 160 hp tractor.
Mow: 9 foot with 85 hp tractor.
Chop: 6 foot with 105 hp tractor, 56 hp tractor
transports.
Rake: 9 foot side delivery with 85 hp tractor.
Baler/kicker: 85 hp tractor with 56 hp tractor
transport.

Case Study 2 Alternative Condition Documentation

Name: Farmer 2

Address

Resource Setting

Rotation

Alternative: Conservation Tillage

Level of Analysis

Action
Kinds, Amount, Type

Effects
Of Alt. on Benchmark

Impacts
Of Effect on Farm

First year corn

Spray: Roundup
Notill planter: rented, \$10 per acre, 6 row,
pulled with 85 hp tractor.
Cultivate: 4 row with 85 hp tractor.
Custom operation: topdress urea.

Second year corn

Manure: 15 tons per acre (liquid equivalent),
pulled by 105 hp tractor.
Chisel: 10 foot with 160 hp tractor.
Disk: 20 foot offset with 160 hp tractor, 2x.
Plant: 4-32 with 56 hp tractor, Atrazine and
Prowl, 28,000 population.
Spray: As recommended.
Cultivate: 4 row with 85 hp tractor.
Custom operation: topdress urea.
Chop: Same as before.
Combine: Same as before.

(Continued on next sheet)

Soil

Ephemeral gullies eliminated. Plow pan is gone.
No sedimentation of ditches. Erosion reduced to
"T". No sediment covering crops. No ruts in field.

Water

Pond not filling in, no flooding of roads. Runoff
reduced and culverts not clogged. Palatability of
water increased.

Air

Plants

Yields stabilized. Better forage.

Animals

Time used much more efficiently, scouting ability
increased. Long strips easier to work than small
fields. More uniform conditions across the farm
(fertility, soil).

Positive

Maintenance costs decline.
Yields stable.
Not burying tractors.
Less time needed for operations. Farmer took
a vacation this year.
Better forage, leading to increased profits.
More efficient use of manpower.

Negative

Yield on outer rows less than inner rows -
competition.
Mounding at edge of strips means more
maintenance of strips.

Name: Farmer 2

Address

Resource Setting

Rotation

Alternative: Conservation Tillage

Level of Analysis

Action
Kinds, Amount, Type

Effects
Of Alt. on Benchmark

Impacts
Of Effect on Farm

Third year corn

Same as second.

Small Grains (fourth year)

If rye, broadcast directly on corn ground.

Rents spreader.

If wheat, will chisel, disk 1x, drill (10 foot with
recommended fertilizer, 56 hp tractor). 30 lbs.

N applied in spring.

Combine: \$26 per acre.

Small grains and hay (fifth year)

Chisel, disk 2x, drag with 160 hp tractor.

Interseed small grains and hay.

Combine small grains at \$26 per acre.

Mowing and chopping as in benchmark.